Virtual Human Health and Safety Integration System

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Taking into account the recent spreads of COVID-19 and the visible strain on the health infrastructure of many countries, the project was designed to see whether there could be some way of relieving the strain by simply using sensors, analysing the data and somehow keep it affordable and versatile enough. It was started by researching all different sensors and techniques to use them along with the best ways to allow them to communicate with user and emergency services. First a Bluetooth model was made. A few sensors were connected to a MCU to make it communicate with a phone, that way it not only provided a clear method of communication. The prototype was first made on a breadboard and was later made more compact. Then software for phone was designed and ended up with a minimum viable product. It was concluded that two things could easily be implemented; fall detection and temperature measurements, the prototype ended up working quite reliably. More information and data could be acquired by adding more sensors, some more expensive than others, means that entire product can be made more modular which would increase cost efficiency and customer satisfaction. The device could reliably send data and calling for help would be possible, however another version can definitely be made in which the device is independent and needs no external devices. This showed that this product has great potential, can reliably analyse data and check for issues. With sophisticated algorithms. Thus, it was found that this can not only add an extra security layer at minimal cost but also reduce burden on medical equipment, as well as laying down the foundation for more research in medical facilities by simply using a few modular sensors.

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